

SHOE SOLE HAVING CUSHIONING HEEL PORTION

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a shoe sole, and more particularly to a shoe sole having a resilient cushioning device for the heel portion thereof.

2. Description of the Prior Art

Typical shoe soles may comprise one or more bladders or air chambers formed in the shoe soles, to increase the resilience of the shoe soles, and to resiliently support the heel portions of the users.

However, the bladders or the air chambers formed in the shoe soles may not be used to effectively cushion the heel portions of the users.

The present invention has arisen to mitigate and/or obviate the afore-described disadvantages of the conventional shoe soles.

SUMMARY OF THE INVENTION

The primary objective of the present invention is to provide a shoe sole including a resilient cushioning device for attaching to the heel portion thereof to effectively cushion the heel portions of the users, and thus to comfortably support the heel portions of the users.

In accordance with one aspect of the invention, there is provided a shoe sole comprising a heel portion and a front portion, and a resilient cushioning device engaged in the heel portion of the shoe sole for cushioning heel portions of users. The resilient cushioning device includes a first and a second frame members cross to each other to form an X-shape structure as seen from side portion of the resilient cushioning device, the first frame member

and the second frame member each includes an inclined structure having a front portion and a rear portion, the rear portion of the first frame member is located above the rear portion of the second frame member, and the front portion of the first frame member is located
5 below the front portion of the second frame member. The rear portion of the first frame member and the front portion of the second frame member are suspended in the shoe sole, and thus may include a resilience to cushion and support the heel portions of the users.

10 The first frame member includes a U-shaped structure, as seen from upper portion thereof, and having a space formed between two legs. The front portion of the second frame member is extended upwardly into the space of the first frame member.

A bladder may further be provided and engaged between the
15 rear portions of the first frame member and the second frame member, to cushion the rear portion of the first frame member.

The front portion of the second frame member includes one or more reinforcing ribs extended therefrom to reinforce the second frame.

20 Further objectives and advantages of the present invention will become apparent from a careful reading of the detailed description provided hereinbelow, with appropriate reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

25 FIG. 1 is a side schematic view of a shoe sole in accordance with the present invention;

FIG. 2 is a top plan view of a resilient cushioning device for

the shoe sole;

FIG. 3 is a front perspective view of the resilient cushioning device for the shoe sole;

FIG. 4 is a rear perspective view of the resilient cushioning device for the shoe sole; and

FIG. 5 is a cross sectional view taken along lines 5-5 of FIG. 2.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to the drawings, and initially to FIG. 1, a shoe sole 10 in accordance with the present invention comprises a rear or heel portion 11 for supporting heel portions of users, a front portion 12 for supporting front foot portions of the users, and a resilient cushioning device 20 attached or engaged in the heel portion 11 of the shoe sole 10 to effectively cushion the heel portions of the users.

The resilient cushioning device 20 may be engaged into the heel portion 11 of the shoe sole 10 while molding the shoe sole 10, and includes two frame members 30, 40 arranged cross to each other, in order to form an X-shape structure (FIGS. 1, 5) as seen from the side portion of the resilient cushioning device 20.

The first frame member 30 includes an inclined structure having a rear portion 31 located above the second frame member 40, and a front portion 32 located below the second frame member 40; and includes a U-shaped or horseshoe-shaped structure, as seen from the upper portion thereof (FIG. 2), having a space 33 formed or defined between two legs 34.

The second frame member 40 also includes an inclined structure having a rear portion 41 located below the rear portion 31 of the first frame member 30, and a front portion 42 located above

the front portion 32 of the first frame member 30. The front portion 42 of the second frame member 40 is extended upwardly through or into the space 33 of the first frame member 30, best shown in FIGS. 2-5.

5 As also best shown in FIGS. 2-4, the front portion 42 of the second frame member 40 is preferably slightly shorter than the front portion 32 of the first frame member 30, and preferably includes one or more reinforcing ribs 43 extended upwardly therefrom, for reinforcing the front portion 42 of the second frame member 40. The
10 frame members 30, 40 may be engaged into the heel portion 11 of the shoe sole 10 while molding the shoe sole 10.

 In operation, as shown in FIG. 1, due to the engagement or the molding of the frame members 30, 40 within the heel portion 11 of the shoe sole 10, and due to the inclined structure of the frame
15 members 30, 40, the rear portion 31 of the first frame member 30 and the front portion 42 of the second frame member 40 are suspended in the shoe sole 10 and may thus include a suspending structure, and may thus include a suitable resilience to cushion and to comfortably support the heel portions of the users.

20 The resilient cushioning device 20 may further include a bladder or a resilient member 50 engaged between the rear portions 31, 41 of the two frame members 30, 40 (FIGS. 1-5); and/or another bladder or a resilient member 60 engaged between the front portions 32, 42 of the two frame members 30, 40 (FIGS. 1, 5), to further
25 provide a cushioning force between the two frame members 30, 40, and thus to further cushion and comfortably support the heel portions of the users.

Accordingly, the shoe sole in accordance with the present invention includes a resilient cushioning device for attaching to the heel portion thereof to effectively cushion the heel portions of the users, and thus to comfortably support the heel portions of the users.

5 Although this invention has been described with a certain degree of particularity, it is to be understood that the present disclosure has been made by way of example only and that numerous changes in the detailed construction and the combination and arrangement of parts may be resorted to without departing from
10 the spirit and scope of the invention as hereinafter claimed.